



Belgian Endive Cultivation and Agroforestry Systems

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Belgian Endive

Endive (*Cichorium intybus* L. var. *foliosum*) is a plant from the family of composite flowers (Asteraceae). This relatively recent Brabant vegetable is also known as the "white Brabant gold" due to its labor-intensive cultivation and the fact that it was once one of the few vegetables that could be grown during winter. The combination of agroforestry and vegetable cultivation offers many opportunities but also presents challenges. The integration of tree rows and vegetables is mainly applied by smaller agricultural businesses that sell their products directly to customers through short supply chains. However, scaling up vegetable cultivation in agroforestry requires even more conviction and investment. Combining trees with crops, such as vegetables, also brings some challenges. For instance, competition for light, water, and nutrients is an important factor to consider. Therefore, selecting the right tree species is essential, taking into account factors such as the openness of the canopy, root depth, and the timing of leaf emergence. Additionally, the design of the agroforestry system is crucial, requiring attention to the orientation of tree rows, planting distances, and the spacing between rows. The management of the trees, such as pruning both the canopy and roots, is vital to ensuring an optimal balance with vegetable cultivation. Despite these challenges, agroforestry offers numerous benefits. The shade from the trees can create a more moderate microclimate, which helps reduce evaporation during periods of extreme heat. For endive, sufficient soil moisture is important for the early growth, root yield and quality. Fallen leaves contribute to organic matter in the soil, improving soil structure and fertility. Moreover, tree rows can support natural pest control by attracting and housing beneficial insects such as the ichneumon wasp. Depending on the selected tree species, additional income can be generated through the production of wood, fruits, or nuts. Furthermore, trees help mitigate the impact of extreme weather conditions thereby contributing to a more resilient agricultural system.



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